

## ABSTRACT OF THE DISCLOSURE

A high-technology method for creating, reproducing, and or precisely fitting custom appendages to topographically complex structures. The method comprises a combination of novel measurement techniques in conjunction with computerized modeling and machining processes applied to achieve a virtually perfect tailored fit with mating structures. The method does not require the physical presence of the mating structure so the modeling and machining operations may be conducted at a separate location based solely on parametric dimensional and/or graphical data inputs and a customized data form. Said data may be transmitted conventionally or electronically as by fax or the internet. The invention includes a printed virtual protractor tool (16) for accurately measuring angles. A means for direct digitization of the required topological data input is also provided. The novel aspects of this invention can be combined with conventional fitting equipment and processes. The scope of this invention is exceedingly broad with a variety of potential applications cited. Two examples are presented to illustrate utility in the context of complex operations routinely encounter by gunsmiths in fitting recoil pads (9) to gunstocks (23) and fitting sighting ribs (37) to gun barrels (42).